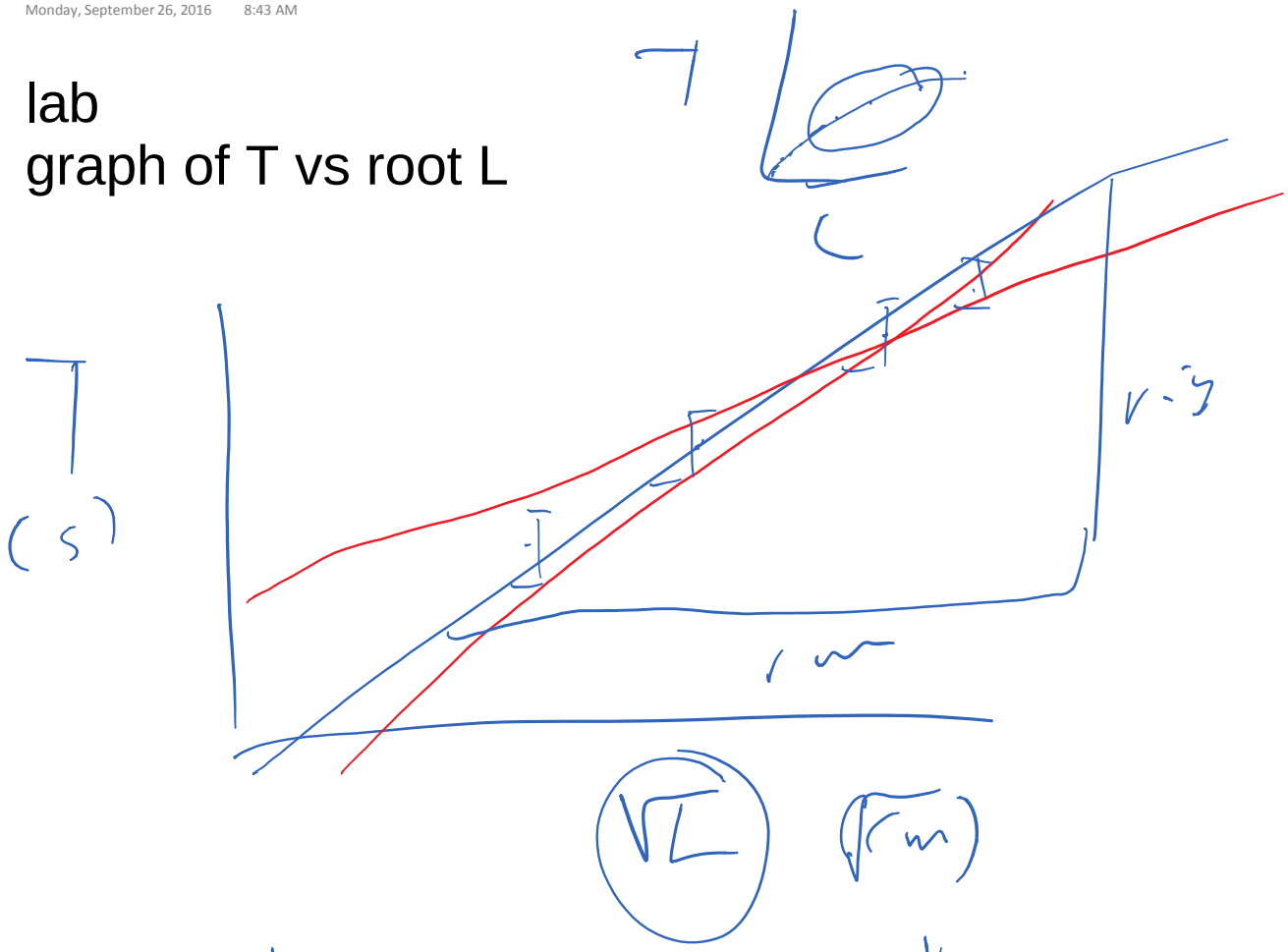
Monday, September 26, 2016 8:43 AM

lab
graph of T vs root L



Don't say "prove"

Say "supports"

theoretical slope = $2.0 \frac{s}{\sqrt{m}}$

$2.0 \frac{s}{\sqrt{m}} \left(\frac{\sqrt{m}}{\sqrt{100\,cm}} \right)$

$0.20\ s$

$\sqrt{cm}$

$$T = \frac{2\pi}{\sqrt{g}}\sqrt{L}$$

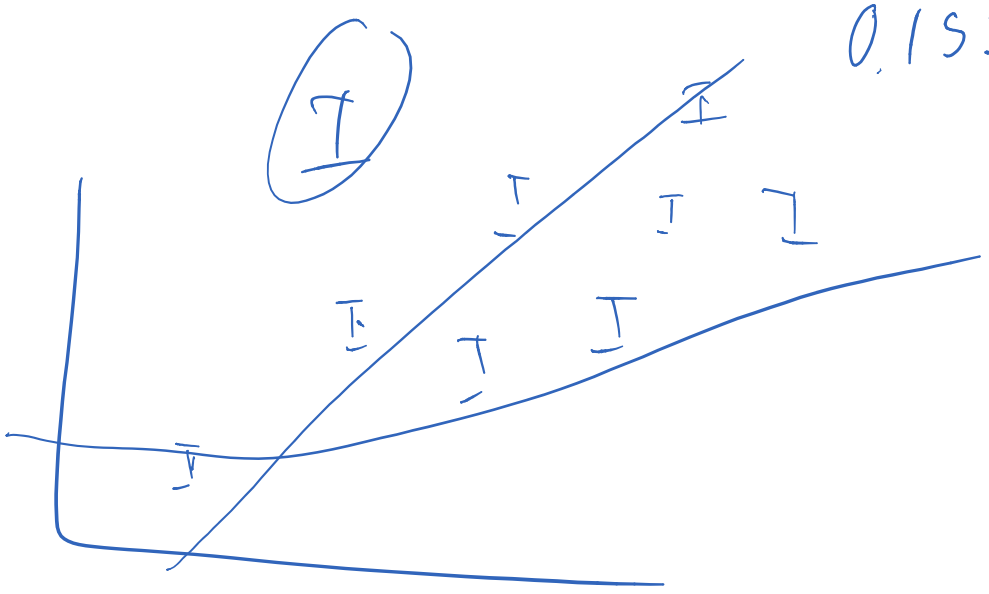
$$\rightarrow \frac{2(3.14159)}{\sqrt{9.81\ m/s^2}}$$

$$= 2.0\ s/\sqrt{m}$$

$$T = \left(Slope \pm \frac{max - min}{2}\right)\sqrt{L} + y\text{-}int \pm \Delta y$$

$$T = (2.0)\left(1.1\ \frac{s}{\sqrt{m}}\right) \pm 0.2\ \frac{s}{\sqrt{m}}\sqrt{L} \pm$$

$0.1\ s \pm 0.1\ s$



$0.9 \frac{s}{\sqrt{m}}$ off theoretical value

much bigger than uncertainty $\pm 0.1 \frac{s}{\sqrt{m}}$

Title Name First + last block

Purpose

Hypothesis Part 1 + Part 2

Procedure + materials

observations – uncertainties + units everything

Analysis graph T vs $\sqrt{L}$

T vs ?

calculations – slope
– uncertainty
– deviation from theory

equation →

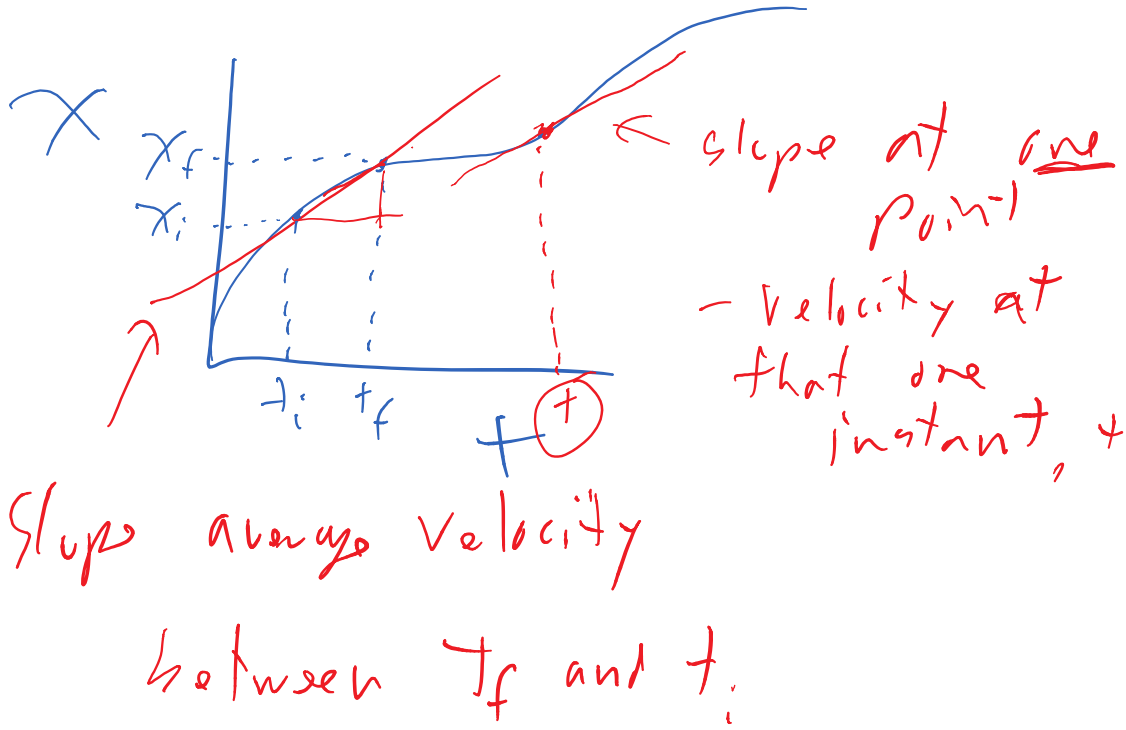
↑ $\frac{2\sqrt{5}}{\sqrt{9}}$

Conclusion - data supports? hyp.

Sources of Uncertainty - quantity - estimate
- compare
- evidence

hand in the lab next class

Kinematics
description of motion
position, x - where you are relative to a reference point, with direction. vector
distance, d or l, amount of space between two points. scalar - no direction
displacement - book d, IB uses s, the change in position, s = xf - xi
f is final , i is initial
velocity, v is the instantaneous velocity, the velocity at a particular instant.
velocity is the rate of change in positon.
$v=\Delta x/\Delta t$ as the change approaches zero, the v approaches the instantaneous velocity.
the average velocity,
v_{avg} = total displacement / total time

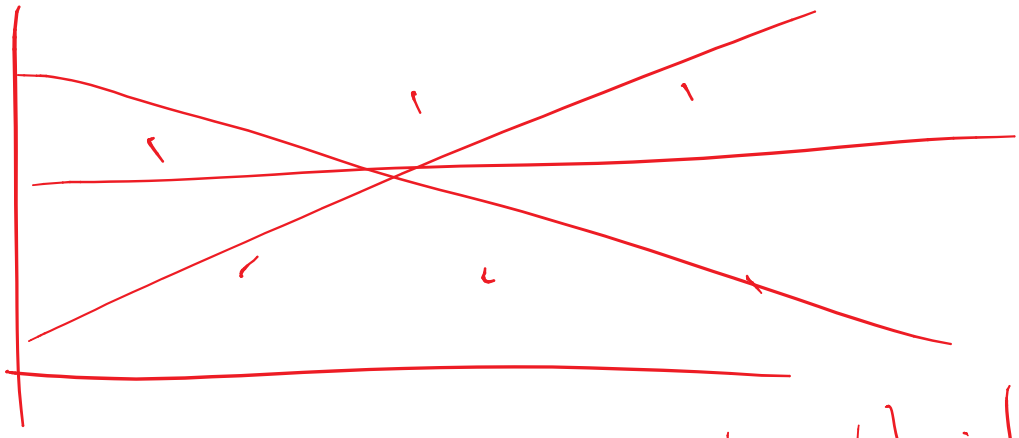


eg. Amy runs 400.0 m in 1minute and 10s on the track 100.0m South of the school.
determine:

a) distance travelled running 400m
b) displacement running 0m
c) average velocity while running 0m/s
d) average speed while running 400/70= 5.7143 = 5.7 m/s IB ms^{-1}
e) instantaneous velocity while running away from the school assuming constant speed, 5.7 m/s South
f) final position 100 m South of the school

Assignments:
lab report
Hecht p50, q13, 17, 24, 27 - instantaneous

speed at 2.0s and at 8.0 s as well as the average speed between 2 and 8s. q 31



$$Slope = 0 \pm \frac{|max| - |min|}{2}$$